Preparing for Outbreak Investigations

How to Plan Your Operation and Prepare Your Staff

Essential tasks in being prepared for outbreak investigations:

- Training interviewers to collect epidemiological data in person, by telephone, or by other means.
- Preparing generic epidemiological interviewing instruments that can be customized to the particular situation.
- Preparing and saving program code for anticipated data analyses.
- Discussing your outbreak investigation strategy with all internal and external partners to secure their support and facilitate operations. Memoranda of understanding may be desirable to clarify the roles of each partner.
- Training all members of the outbreak investigation team in Incident Management structures and notification procedures.
- Providing standard equipment for all team members, including items to make members immediately recognizable to other responders, references, forms, and communication devices.

1. Plan for outbreak investigations of varying sizes and complexities:

- *routine staffing:* Investigations which can be executed with existing staff currently responsible for disease outbreak and case investigations,
- *emergency staffing:* Investigations which require the deployment of any staff with expertise in outbreak or case investigations, and
- *surge staffing:* Investigations which require the support of staff and volunteers without investigative expertise.

2. Identify staff and volunteers available and suited to investigative efforts:

- staff currently holding public health case and outbreak investigation responsibilities,
- staff with previous experience in public health case and outbreak investigations,
- support staff familiar with outbreak and disease reporting procedures and contacts,
- other staff engaged in public health/human services work, and
- community volunteers with clinical or investigative expertise.

3. Organize and implement a program of ongoing training for staff assigned to Routine and Emergency outbreak response:

- an overview of emergency response and preparedness efforts,
- the specific responsibilities of the investigation teams in the context of an emergency response plan,
- incident management structure and operations,
- how to protect staff members during an emergency,
- notification and duty-station procedures,
- key contacts, and

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- more detailed topic areas, such as;
  - Category A agents,
  - chemical, radiation, and hazmat concerns,
  - interviewing techniques,
  - how to protect sensitive data, and
  - how to coordinate specimen collection.

4. **At the start of a surge investigation, prepare training materials for assigned staff. The materials should be brief and targeted to the situation at hand.**
5. **Prepare generic epidemiological data collection modules and analytical programs. Include the following modules, which can be used in their generic form or adapted to the situation at hand:**

- demographic data, food-intake history, travel history, recent activity, contacts ascertainment, and
- isolation or quarantine compliance and management.

6. **Include primary health care partners in training and practice exercises. Consider formalizing agreements about the roles of partnering institutions with a memorandum of understanding.**

Advance Preparation of Epidemiologic Tools

GENERIC MODULES

Most epidemiologic questionnaires have certain items in common and these can be prepared in advance to facilitate rapid deployment as emergencies occur. Additionally, preparations for other situations can be made by anticipation of the kinds of epidemiologic information that would need to be collected in a variety of emergency situations such as an intentional release of biological (with consideration of whether or not the agent is likely to be communicable from person-to-person), radiation or chemical agent. Travel, activity and food histories often need to be evaluated in identification of the exposures and routes of exposure. Each of these tools could be revised quickly to reflect operating hypotheses for the situation at hand.

KEY MODULES

- *Demographic module:* Residential/Professional addresses, phones, age, sex.
- *Personal Contact module:* Household members, other intimate contacts, casual contacts, health status of contacts.
- *Food History module:* Item by item inventory of all food and drink for 72 hours, listing of all public eating facilities where meals/drinks were taken.
- *Activity History module:* 7 – 10 day accounting for participation in moderate to large social/community events, 7 – 10 day use of mass transit, travel history over previous month.
- *Clinical History module:* inventory of current signs/symptoms, brief medical history.

DATA MANAGEMENT

Data management files and data entry screens can be pre-positioned and included in training efforts based on the generic modules described above. Doing so will reduce the learning curve associated with these applications and facilitate efforts during the emergency. At the time of the investigation, a review of the required revisions can be highlighted to draw attention to key changes.

DATA ANALYSIS

Standard epidemiologic analyses such as epi-curves, line-lists and two-by-two tables for calculations of odds ratios, etc, can be pre-programmed to correspond to variables contained in the generic modules and data management files to facilitate analyses and standardization of analytical efforts.

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